

### **REMARKS**

Claims 1-14 are pending. Claims 1-14 are rejected. Claims 1-3, 6-9, 11 and 13-14 are amended. Support for the amendments can be found throughout the application, for instance at pages 4, 4 (lines 15-16), 5 (lines 19-20), 7-8, 8 (lines 10-14) and 14 (lines 19-22) of the specification and in the claims as originally filed. No new matter is added. Claims 1-14 are submitted for further consideration at this time. Applicants respectfully request reconsideration and withdrawal of all rejections.

#### **Claim Rejections - 35 U.S.C. 112, first paragraph**

Claims 1-14 are rejected under 35 U.S.C. 112, first paragraph, as being inadequately described in the specification. Applicants respectfully point out that the rejection is moot in light of the claim amendments indicated herein. Applicants note in particular that claim 1, section 1.b) has been amended to recite "biuret of hexamethylendiisocyanate (HDI)", as would be quite clear to those of ordinary skill in the art. Applicants urge withdrawal of the rejection.

#### **Claim Rejections- 35 USC 112, second paragraph**

Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite. Applicants respectfully note that this rejection is also moot in light of the claim amendments indicated herein. Applicants wish to point out, however, that as explained at page 14 (lines 19-22) of the specification, the phrase "dry content" or "dry

product" refers to the total amount of components excluding the volatile solvent. In the claimed invention, the amount of dry content is higher than 80% by weight while the amount of solvent (component 3) is the remaining part to 100% by weight. Regarding claims 6 and 7, Applicants note that the repeating unit  $-(C_3F_6O)-$  refers to both a  $C_3$  fluoroalkylene group having a straight chain (e.g.,  $-(CF_2CF_2CF_2O)-$ ) and a  $C_3$  fluoroalkylene group having a branched chain (e.g.,  $-(CF_2CF(CF_3)O)-$  or  $-(CF(CF_3)CF_2O)-$ ). The repeating unit  $-(CF_2)_{a'}O-$  describes only the fluoroalkylene group having a straight chain, for example  $-(CF_2CF_2CF_2O)-$  when  $a'=3$ . Applicants therefore urge that all claims are clear and definite.

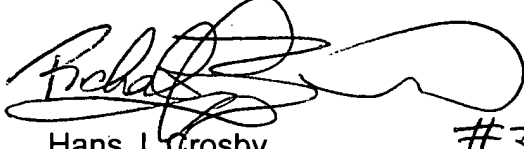
In view of the amendments and remarks above, Applicants respectfully submit that this application is in condition for allowance and request favorable action thereon.

In the event this paper is not timely filed, applicants hereby petition for an appropriate extension of time. The fee for this extension may be charged to our Deposit

Account No. 01-2300, along with any other additional fees which may be required with respect to this paper referencing Attorney Docket No. 108910-00022.

Respectfully submitted,

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Enclosure: Marked-Up Copy of Amended Claims

**MARKED-UP COPY OF AMENDED CLAIMS**

1. (Amended) Compositions for coating having a dry content higher than 80%  
[, preferably of about 85-90%] by weight, comprising polyisocyanates and  
(per)fluoropolyethers [based on polyisocyanates and PFPE,] completely  
crosslinkable also in a range of temperatures between 5°C and 20°C, said  
compositions comprising the following components:
  - Component 1): mixture comprising:
    - 1.a) Partially fluorinated prepolymers, having free NCO groups,  
obtained by reaction of (per) fluoropolyethers (PFPEs) diols having  
number average molecular weight Mn in the range 800-1,500,  
[preferably 1,000-1,200,] with a [the] cyclic trimer of the  
isophorondiisocyanate (IPDI), in said reaction the ratio in  
equivalents between the OH/NCO groups being in the range  
0.20-0.25,
    - 1.b) [non cyclic isocyanic trimer] biuret of hexamethylenediisocyanate  
([biuret of] HDI) having an absolute viscosity at 20°C lower than  
5,000 mPa.s,

in component 1) the ratio [referred to the dry product] between the  
compound 1.b) and the compound 1.a) being in the range 10-90 [,  
preferably 30-60] parts of compound 1.b)/100 parts of compound 1.a);
  - Component 2): (per) fluoropolyether (PFPE) diol having Mn in the range  
350-700, [preferably 500-650,] the amount of PFPE diol component 2)

being such that the ratio in equivalents between the OH and NCO groups in the composition is in the range 0.9-1.1;

- component 3): inert organic solvent under crosslinking [conditions,] temperatures [complement], being the remaining part to 100% by weight of the composition.

2. (Amended) Composition according to claim 1, wherein the component 1.a) is [obtainable] obtained by hot dissolving, [preferably at 40°-80°C,] the trimer of IPDI and the (per) fluoropolyether diol in inert organic solvent under crosslinking temperatures [a solvent as those indicated in component 3)] and maintaining the stoichiometric ratio in equivalents OH/NCO within the range 0.20-0.25 [indicated limits] and a dry content in the range 65%-85% by weight, by adding the polymerization catalyst and hot maintaining the reaction until reaching the theoretic NCO content.
3. (Twice Amended) Composition according to claim 1, wherein as component 2, (2a) mixtures of PFPE oligomer diols having Mn in the range 800-1,500, [preferably 1,000-1,200,] with PFPE oligomer diols having Mn in the range 350-700 [, preferably 500-650,] are used, in said mixtures of oligomers the weight ratio between the high and low molecular weight oligomers, respectively, being in the range 1/2-1/10, or the number

average molecular weight of the mixtures of PFPE diol oligomers being lower than or equal to 700.

6. (Twice Amended) Composition according to claim 1, wherein the (per) fluoropolyether diol compounds comprise one or more of the following (per) fluoroxyalkylene units
- (C<sub>3</sub>F<sub>6</sub>O) -, - (CFYO) -, - (C<sub>2</sub>F<sub>4</sub>O) -, - CR<sub>4</sub>R<sub>5</sub>CF<sub>2</sub>CF<sub>2</sub>O -, - (CF<sub>2</sub>)<sub>a'</sub>O -,
- wherein Y is F or CF<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> are equal to or different from each other and selected from H [,] or Cl, a' is an integer equal to 3 or 4.

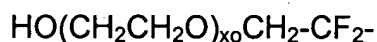
7. (Amended) Composition according to claim 6, wherein the PFPE diols are selected from the following, wherein the (per) fluoropolyoxyalkylene units are statistically distributed along the chain:

- al) - (C<sub>3</sub>F<sub>6</sub>O) m' (CFYO) n' - or - (C<sub>3</sub>F<sub>6</sub>O) m' wherein the (C<sub>3</sub>F<sub>6</sub>O) and (CFYO) units are perfluoroxyalkylene units statistically distributed along the chain; m' and n' are integers such as to give the above mentioned molecular weights, and m'/n' are comprised between 5 and 40, n' being different from 0; Y is F or CF<sub>3</sub>;
- [when the unit (CFYO) is absent in this case n' can also be equal to 0;]
- bl) - (C<sub>2</sub>F<sub>4</sub>O) p' (CYFO) q' - (C<sub>3</sub>F<sub>6</sub>O) t' - or - (C<sub>2</sub>F<sub>4</sub>O) p' (CYFO) q' -
- wherein p' and q' are integers such that p'/q' ranges between 5 and 0.3[, preferably between 2.7 and 0.5] and such that the molecular weight is

within the above mentioned range [indicated limits]; t' is an integer with the meaning of m', Y = F or CF<sub>3</sub>; [t' can be 0 and]  $q'/(q'+p'+t')$  or  $q'/(q'+p')$  is equal to 1/10 or lower and the t'/p' ratio ranges from 0.2 to 6;

- cl) -CR<sub>4</sub>R<sub>5</sub>CF<sub>2</sub>CF<sub>2</sub>O- wherein R<sub>4</sub> and R<sub>5</sub> are equal to or different from each other and selected from H[,] or Cl, the molecular weight [such as to be comprised in] within the above mentioned range [limits], a fluorine atom of the perfluoromethylene unit [can be] is optionally substituted with H[,] or Cl, or perfluoroalkyl group, having [for example] from 1 to 4 carbon atoms;
- dl) -(CF<sub>2</sub>)<sub>a</sub>O- wherein a' is an integer equal to 3 or 4.

8. (Twice Amended) Composition according to claim 6, wherein [the] two end groups, equal to or different from each other, of the bifunctional (per) fluoropolyethers are [of the type]



wherein x0 is an integer from 0 to 4, [preferably from 0 to 2; in the preferred compounds x0 = 0;] said end group being linked to the (per) fluoroalkylene unit by an oxygen atom but not by peroxidic sequences -O-O-.

9. (Twice Amended) Compositions according to claim 1 which [can be] are formulated both as monocomponent [and] or as bicomponent.

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11. (Twice Amended) Compositions according to claim 1, containing additives such as pigments and fillers [, preferably dispersed or pre-dispersed in component 2)], thixotropic agents, polymer dispersing agents selected from acrylic, silicone, polyurethane, polyamine, or having a carboxylic or non ionic functionality; stretching, anticissing, antifoam additives, additives to reduce photooxidation [such as] including UV adsorber and hindered amines (HALS).
13. (Amended) Composition according to claim 12, wherein the catalyst is selected from the groups consisting of [the following classes:] a) metal or amine catalysts, [preferably tertiary amines, such as] including triethyldiamine, N-ethyl-ethyldiamine, tetramethylguanidine, dimethyl cyclohexylamine, diazobicyclo octane; b) organometal catalysts [such as] selected from dibutyltindilaurate, tin octonate, cobalt naphthenate, vanadium acetylacetonate, dimethyltin-diethylhexanoate, dibutyltin diacetate, dibutyltin dichloride, and mixtures thereof; the catalyst being added in concentrations [generally] ranging from 0.1 to 2% by weight [and preferably from 0.5 to 1%].
14. (Twice Amended) Coating [obtainable] obtained by the compositions of claim 12.